

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

62.09

Bur

BULBS FOR POTS

AND FALL PLANTING IN THE GARDEN



LIBRARY
RECEIVED

★ SEP 26 1952 ★

U. S. Department of Agriculture

A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS, IRIS,
GERANIUM, ORCHID, GESNERIA, AND OTHER PLANT FAMILIES,
AND MANUAL OF CULTURE.

Many Reduced Prices. New Items Listed.
A Personal Letter, — to You.

FALL 1952



CECIL HOUDYSHELE

1412 Third St.

La Verne, Calif.

Librarian
U. S. Dept. of Agriculture
Washington 25, D. C.



Return Postage Guaranteed.
If not interested, please
refuse delivery.

Sec. 34.66, P. L. & R.

A PERSONAL LETTER, TO YOU

Dear Floral Friends,

This catalog is arriving about one week late. Writing it required more than the usual length of time as we wished to make a rather full revision of culture advice, as well as prices and to add a number of new items.

Re prices I am happy to say that we are able to hold the line on all items we grow and even to reduce many prices. Mr. Holland, our field manager, is a most efficient man and deserves much credit for this.

But on Books and Supplies we are unable to prevent them from following the general upward tendency. On books, and catalogs the rising cost of paper and of labor indicates that these prices will not level off for some time. We advise that a one year's supply of books and garden supplies should be ordered early. Particularly advise that if you want Bailey's Cyclopedia of Horticulture for yourself or as a Christmas present, you should get it soon. The price will surely be higher on the next printing. These books are perhaps the greatest work in horticultural literature.

The cost of printing catalogs is up considerably and the cost of mailing is up 50%. We have reluctantly been compelled to revise our mailing list more carefully and to take off names that do not have credit for annual purchases. We have found it advisable also to cease sending first catalogs free and have placed a 10c charge on all. We try to make them interesting and useful and 10c does not pay the cost of printing, postage and clerical expense.

Among the new items listed and the special offers please note the special offer of Lycoris. There is one there that I believe has never before been listed in American catalogs. We expect to receive our bulbs from Japan this month or not later than early September. We are informed also that a few bulbs of a new or at least undetermined species will be included. It will be known as Lycoris, sp. nova and can be ordered for \$3.00, additional to collection prices.

Fancy Leaf Geraniums are attracting much attention and we are able to offer several kinds. Geraniums are old favorite house plants and easy to grow. We are again able to offer Iris reticulata and are reducing the prices of the easiest of all Orchids, Bletilla hyacintha, a terrestrial for the outside garden. Our list of African Violets has been greatly enlarged, I believe we have all the latest ones. More leaves are listed. The culture advice has been brought up to date tho you do need Mrs. Rector's and Mrs. Wilson's books. This is not all that I should mention. Please read the entire catalog.

Mrs. Houdyshel requests that I call attention to her Kodachrome slides. She rents these, accompanied by a descriptive lecture, for \$10.00. She is frequently invited to lecture to clubs and has been very easy regarding fees. But the expenses and the risks of traffic compel us to place a minimum fee of from \$10.00 to \$25.00, depending on distance.

Do you love dogs? Nearly every one does including ourselves. We have raised two litters from our excellent Cocker female, Cinderella, bred to a blonde sire, Gold Chip, famous Canadian and American Champion. In the ancestry of these litters there are 27 champions. Recently we sold one to a N. Y. customer and she was offered and refused \$300 for him. He is worth it. But we must not undertake this again. We pay the top stud fee and raise them scientifically. We have lost money on both litters. We still have a male and female from last litter, now 7 mo. old. They have had all puppy and adult shots. All are registered. The progeny of both will be about one half black and one half red or blonde. The best offer will buy them. We prefer to sell to someone who can call and see them and carry them away.

Following this letter is a picture. I have never before included my own picture in a catalog. I have been against it. But have sometimes been requested to do so and also have been asked personal questions. Confucius said, "A picture says more than 1000 words." Here is my answer, but it would not be included here except for my pride in my grand-

daughter, Virginia Lee, and great-granddaughter, Sherry, for whom we named our Crinum Virginia Lee and the Saintpaulia, Sherry Girl. Sherry now is two years old.

Altho a little disappointed, I believe the political conventions have given us two excellent candidates and we are assured of a new president who will be competent, honest and loyal. Both candidates were reluctant to run and accepted nomination under pressure.

I have only one bit of advice. Be sure to vote. It is our disgrace that our best records recently have been that only about 51% of our citizens vote. I hope I do not offend by adding. Don't vote pro-labor or pro-capital, but pro-labor and capital. They are of equal importance.

Wishing you garden success and much happiness. Sincerely,

Cecil Houdyshel



TERMS AND INSTRUCTIONS FOR ORDERING

Prices in this catalog cancel all former prices by catalogs, price lists or advertisements. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 3% Sales Tax.

Remit in advance, in full, by check, or M. O. No C. O. D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. Checks and M. O.'s must be payable to Cecil Houdyshel to fit our endorsement stamp. Stamps at face value accepted for small sums only. For over 50c send 5% extra.

Postage rates are higher. Advertising, labor, everything else costs more. Our average prices are lower but we still send all items postage prepaid on orders of \$1.00 or more, unless otherwise noted. Under \$1.00, send 15c extra. Seed orders are excepted if you

send self addressed, stamped envelope. When you compare prices, remember we deliver free.

Express shipment is safer especially in winter. It costs more and we ship by express, f. o. b. when requested. Extras either in size or number are included to balance your expense, approximately.

Air Parcel Post is also often advisable. If ordered to be sent thus include extra for postage. We prepay to Zone 8. By air we charge the excess above this. Estimate this. If too much we give you a credit or refund. If not enough, you must be willing to assume the extra cost.

Insurance up to \$5.00, costs 5c extra. \$5.00 to \$10.00, 10c. \$10.00 to \$25.00, 15c. Over \$25.00, cost is in proportion to \$25.00 value rate. Postal insurance covers all except freezing in transit. Only Express covers freezing. **Special Handling** costs 15c up to 2 lbs. 2 to 10 lbs., 20c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 35c. 2 to 10 lbs., 45c. Over 10 lbs., 60c.

Each fee, Insurance to Special Delivery is for one package only.

Order blanks. Make your own. They should not be in letter form as this makes it difficult for packers. Place one item only in a line, in this order: 1. Quantity ordered. 2. Name of item but not description. 3. (In column on right) price of item. Below add other extra expenses like sales tax, insurance, etc.

A letter that requires an answer, when included with order, is referred to me and will likely cause delay of delivery. I am often a month behind with correspondence.

Wholesale. We give no discounts to dealers. There are several items we can supply wholesale. Send your want list and we will give best quantity prices.

Foreign Orders. If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insect and Pest Act. Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. Many Latin American countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your Postmaster. Usually only a permit is needed.

Partial Shipments are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting.

We guarantee our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume responsibility if you do not. Such a guarantee usually means that the expense of replacements is spread over the entire sales and everyone pays more for the plants. Everyone fails sometimes and we try to learn from our failures. As necessary culture directions are in this catalog, we send none with bulbs and other plants.

Catalogs. Spring Catalog mailed Jan. 15. Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested, please refuse catalog or ask P. M. to return at our expense.

All **Catalogs** and **Price Lists** are priced at 10c because of increased cost of printing and of postage. Please do not ask for free copies for yourself or friends. One dime places you on our mailing list and you then receive catalogs as long as you send orders for \$1.00 or more each year.

We ship to every state and territory and to every continent. Calif. bulbs and plants do well, everywhere.

General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus. Some plants, like Bearded Iris do best in a heavy soil. Plants of this nature seldom if ever like shade or acid soils and deep drainage is not so necessary. Some plants, like Gloriosas must have deep sandy soil. Probably most tuberous plants prefer quite sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizers. We recommend only animal manures, compost and commercial fertilizers that are of organic origin such as Spoonit, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Chemical fertilizers are like "patent" medicines. They are stimulating but often the final result is bad. The physical structure of soils is the most important thing. A well drained, friable soil is the best. Sand and humus can be added in sufficient quantities at least in flower beds and the humus can be added in fields by growing cover crops. For humus, add rotted manure, composted weeds, grasses and leaves, leaf mould or peat.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, which we list under Garden Supplies.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like *Ranunculus*. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphids, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled.

See our listing of **Insecticides** under **Garden Supplies**.

If you do much garden work and end the day too tired, you owe it to yourself to use our light weight plastic and indestructible garden hose. See the listing. It is the most economical of all.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like *Gladiolus* prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. I am told that Texas soils are sometimes too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A 2½" Amaryllis, for example, needs a 6" pot. A 1½" Eucharis needs a 5" pot. Small bulbs like Ranunculus or Achimenes may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water. Over this drainage material we usually place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine rotted leaf mould and old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be ⅔ sandy loam, ⅓ humus.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. A potted dormant bulb, seed or plant must be babied to the extent of giving only a light diet. A rich, full meal will often cause failure. We prefer to get them well started and growing and of some size before adding more fertilizer, if any. The chief food of plants is carbon dioxide taken from the air thru the foliage. Water, nitrogen and minerals come from the soil.

When bulbs are well rooted, liquid fertilizer can be used once a month. Weak liquid manure is excellent but not quite as well balanced as Spoonit.

For the starting temperatures and further culture of the plants please read the culture advice given with the listings.

Sources of Further Information. Please note our **Garden Reference Books**. Join local garden clubs. Subscribe for as many garden magazines as you can. We especially recommend Popular Gardening, Dept. H, 90 State St., Albany, N. Y., and Flower Grower, Dept. H., 99 N. Broadway, Albany, N. Y. We are charter subscribers of both. I suggest you buy copies of each at your newsstand. You will probably then subscribe to both of them.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedia of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs, or trees. Price \$40.00. It is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover. On account of increased cost of paper, we expect this price to be advanced soon. It is best to order as soon as possible.

Hortus Second (Bailey). A Concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains only a few culture hints. Both works should be in every garden library. Price, \$8.50.

The above publications are subject to price changes, without notice, by the publishers. In the case that prices again rise on these or any books listed here we will notify the customer. The customer may then accept or cancel order.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A

most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price, \$3.00.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price, \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp., \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. 266 pp., \$4.00. If you have a greenhouse, this is a necessity.

How To Grow Rare Greenhouse Plants. A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Being non-professional or amateur, Mr. Chabot knows best an amateur's problems and how to advise him. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

Geraniums. The best for amateurs on this subject. By Helen V. P. Wilson. \$3.95.

Tuberous-Rooted Begonias and Their Culture. George Otten, veteran grower of Tuberous Begonias, with 60 years experience. An 88-page book, with 35 excellent illustrations. Price, \$2.00.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$2.75.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price, \$3.50.

How To Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price, 25c.

How to Grow Cattleya orchids and a few others is told briefly in our 1949 Orchid Price List. The listings are now all cancelled. Price, 15c.

The Complete Book of African Violets. By Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$2.95.

The African Violet, Saintpaulia. This is Mrs. Wilson's first book and the first book published on Saintpaulias. It is one of the best. Revised. We have only 3 copies and reduce the price from \$2.75 to \$1.75.

How To Grow African Violets. By Carolyn Rector. 94 pages, paper-board covers. Illustrated. How to pollinate, hybridize, grow from seed or leaf cuttings, prepare soils, control pests and diseases, groom plants for show, etc., by a real grower. \$1.35.

Trees For American Gardens, by Dr. Donald Wyman of Arnold Arboretum. Illustrated. 376 pages. If interested in the most beautiful trees and the proper ones for your conditions, you need this book. \$7.50.

The Wise Garden Encyclopedia. By a group of American authorities. Edited by E. L. D. Seymour. 1,380 pages. Profuse illustrations, 64 pages in color. Price, \$5.00.

Please note. Book prices are being advanced and we cannot guarantee above prices to continue long. Best to order promptly.

A to Z On Fuschias. 136 pp. Cloth bound. Illustrations, some in color. 700 varieties described. \$3.00.

Garden Supplies

Postage Extra is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Many do not and we must write for it. This loses time and expense for both of us. Please do not order such items unless you include the postage.

Here is how to find cost of postage. We are very near Los Angeles. Call your P. O. and ask the cost of postage on the packed weight given, from your P. O. to Los Angeles.

The cost to 8th zone is 27c for the first pound and 14c for each additional pound. If you prefer, you may send us this amount and we will return your change, less a charge of 15c for postage and handling the refunded amount.

If your shipment goes by express, no postage is due. But the minimum cost of an express package is now \$1.61, any weight, any distance.

Snail-Kil Pellets. 1 lb., 45c, plus postage for 2 lbs. Two pounds, 75c, plus postage for 3 lbs.

Ant-B-Gon. Set of 4 filled dispensers, 75c, plus postage for 1 lb. Refilling liquid, 4 oz., 40c postpaid.

Volc Oil Spray, for outside plants. Kills mealybugs, scale, red spider, etc. Don't use on orchids, saintpaulias, or most house plants, palm trees or ferns. Fine to clean up your shrubs, trees and most outside plants. 4 oz., 50c postpaid.

Thrip O cide. Contains D. D. T. Kills thrips on Gladiolus or other plants, Scale on Orchids. 4 oz., \$1.20 postpaid.

We assume no risk for results with insecticides.

Spoonit is the fertilizer we use on African Violets and other house plants. It is equally good on outside plants. Analysis: nitrogen 18%; phosphoric acid 18%; potash 14%. To use, dissolve level tablespoonful in a gallon of water. It never burns. Apply once a month. Give transplants half strength. 6-oz. package, 50c, plus 8c postage; 24 oz., \$1.25, plus postage on 2 lbs.; 4 lb. package, \$2.50, plus postage on 5 lbs.

Potting Soils. We do not sell them but we give you the formulas and list materials for making them. We bought some Gloxinia soil once and Gloxinias would not grow in it, because it was dirt and they must have compost with little or no dirt.

Peat. Best Holland Peat in highly compressed bales. 4 lbs., 50c; 10 lbs., \$1.00. F. O. B. If by mail, add 2 lbs. for carton and send the postage. Bales weigh about 100 lbs., up to 115. Price \$7.00, plus 50c packing charge if shipped. F. O. B. Express.

Sphagnum Moss. Best we can get. 70c per lb., postage extra, for 2 lbs.

Plastic Garden Hose. The best made. Cheap plastic hose will disappoint you. This hose is not damaged by sun, weather, being run over by trucks. Only hot water under pressure will injure it. It should last 8 yrs. or longer. Weighs only 3½ lbs. per 25 ft. Price, 25 ft., \$5.50, plus postage on 4 lbs. 50 ft., \$10.75, plus postage on 7 lbs.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting steel. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price with hangers: 8", 95c, \$10.50 per doz.; 10", \$1.20 ea., \$12.75 per doz.; 16", \$2.75, \$25.00 per doz. Postpaid.

Snap On Pot Hangers, for hanging any size pot in tree, lath or greenhouse. Galvanized, non-rusting steel. 45c ea., \$4.50 per dozen.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits ½" pipe. Adjustable, fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$1.36. If by mail add 10c.

Hose End Fogger. Coarse or fine spray. Useful for spraying orchids, tub. begonias, etc., and for damping greenhouse to increase humidity or as a movable fogger. \$1.50. Postage 10c extra.

Rootone. Dust seed, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. ½ oz. 50c, postpaid. 1 lb. can, \$5.00, plus postage for 6 lbs.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

Supplies do not take quantity rates as applied to bulbs except as specified. They are also subject to price changes. Increasing costs of labor, materials, transportation may result

in price changes, tho we hope not. A good plan is to order early altho we expect no very serious increases. Don't forget Sales Tax in California.

POT PLANTS

Many bulbs, corms and tubers are most desirable for growing in pots as house or greenhouse plants. In the following pages, hundreds of varieties are listed and full directions are given for growing them. Many other plants like Billbergias, Anthuriums, Orchids, Marantas, Maricas and African Violets are favorite house plants and are listed although they are not "bulbs." We try to offer you the world's finest plants (including bulbs) for growing in pots.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the **species** (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name in parentheses follows a plant's name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru The Alliae.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton B. Traub of the U. S. Dept. of Agriculture, the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present shortage of paper and its high price these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Mr. E. Frederick Smith, Sec., Box 2398, Stanford, Calif., or you may include this membership fee with your bulb order to me.

The Society also publishes the following book, bound in manila paper.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888.

Amaryllid nomenclature. Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, Epidendrum, and under the genus Amaryllis he included certain Crinum, Zephyranthes, Sprekelias, Brunsvigias, Nerines, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved by "Gentes Herbarum," the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: *Brunsvigia rosea* (*Amaryllis belladonna*); *Amaryllis advena* (*Hippeastrum advenum*).

Agapanthus, Blue Lily of the Nile. Best time to plant is early spring, tho early fall will do very well. Only one species is offered here, at a special price, for that purpose.

Agapanthus longispäthus. Similar but a little smaller than *A. orientalis*. Later flowering. Blue fls. Hardy thruout south. In north, plant in large pots or tubs and winter in frost free basement. Special price, 45c. 3 for \$1.15, usually in one clump.

Alstroemeria (pronounced-stre, not-stro). The Peruvian Lily. Many showy flowers in an umbel on long, slender, stiff stems. The pastel tones are rich and varied, long lasting and popular as cut flowers.

Culture. They must have good underdrainage and therefore if possible, sandy soil. In heavy soil, their cultivation is made possible by the plentiful addition of sand and leaf mould. 60% to 75% sun exposure. Natives of Semi-tropical America, they have been grown as far north as New Jersey in the garden. This has been possible by planting large tubers about 5" or 6" deep and giving a heavy mulch. There is some danger of freezing and consequent loss in the north the first two winters. By that time they have usually deepened themselves below the depth of frost penetration. We cannot guarantee against loss by freezing, but we offer rather large tubers that will help.

Assorted varieties. Large tubers, 50c ea., \$4.00 per doz. Order early.

Alstroemeria seed are about the size of radish seed and are as easy to grow. We saved a few from mixed colors and varieties. Price, 15 seed for 30c. 30 seed for 50c.

Amarcrinum Howardii (*Crinodonna Howardi*). A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. Fall bloomer, order early or it may skip blooming first year. Hardy in south. For large pots in north. Special prices: \$2.00 and \$3.00 each.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "Hippeastrum," literally translated "horse star," we can now say "horse feathers" and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, *Amaryllis* bulbs need to be covered only about an inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids" and don't plant over about 6" deep to top of bulb. 4" deep is better. *Amaryllis* must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough.

We do not advise you to plant imported or greenhouse grown bulbs in the outside garden. They seldom last more than a year or two. These high-bred "hybrids" have been bred for the perfection of the flowers. Little or no attention has been given to vigor. They can be shifted to the garden for summer growth but they must be given special attention, watered frequently and fertilized carefully. Take them inside for the winter. If they do not make roots promptly, try starting in small pots of sphagnum, well compressed and kept moist. When well started, shift with lump of sphagnum into proper sized pots. To get good growth, fertilize with Spoonit.

In Pots. A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots.

It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure. One tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean but do not scrape the base of the bulb and dust the moistened surface of base and the roots with Rootone. Set the bulb two-thirds above surface and water enough to settle soil. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in sunlight. The best temperature now is 50° or 60°.

When you are sure roots have started give a little more heat, more light, more water. But increase all these gradually and avoid a soggy condition of soil at all times. Forcing Amaryllis, with heat, before a good root system is made may result in failure. When favorable growth responds bring plants to higher temperatures, gradually, to 60°, 65°, 70°. Increase sun exposure too. Finally 70° to 75° and full sun if not too hot.

After flowering the bulb has shrunk and a long period of growth is necessary. If good growth is made at this important stage, the bulb will become much larger and offsets may be made. Keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden. If rim of pot is sufficiently below soil surface the roots may emerge and add range to the root system. Or better still, shift the bulb and the unbroken lump of soil to the garden. Water liberally during growth.

There are no quantity discounts on Amaryllis except as specified in the listing.

Amaryllis advena. Oxblood Lily. 5 to 8 ox-blood red flowers in an umbel, on a 10" slender scape, preceding foliage. Fall bloomer. **Culture.** Not suitable for pot culture, but so nearly hardy that in mild sections of north it will succeed where peaches or apricots may be grown. Plant bulbs 6" deep or more, and mulched, in a protected situation. Full sun exposure, heavy or medium loam soil is good but does well in lighter soils also. Order before September 15 if possible, or you may miss first year flowers. **Special prices:** Largest bulbs 60c. Blooming sizes 50c. Medium 30c. Small 15c or 12 for \$1.25. 100 for \$9.00, \$50.00/1000, f.o.b. express. Plant small bulbs only in south, or in cold frame in north.

A. ambigua. The flowers have a long tube, like a lily. There are 5 or more on a very tall scape. The exquisite, spicy fragrance perfumes the entire garden. Customers report success with pot culture. Hardy in south. Plant 4" deep in garden. \$2.50.

A. immaculata. Usually known as *A. candida*. The long, tubular, lily-shaped flowers are pure white. Deliciously fragrant. \$4.00. Immense bulbs, \$5.00.

Hybrid Amaryllis. The above are the only species we offer this fall. Our hybrid Amaryllis are mostly selected from the best field grown. American strains and we call them therefore "Select Strains." They are far hardier and more easy to succeed with than greenhouse grown, imported bulbs. In order to produce high quality, selected bulbs are grown in the greenhouse one year for seed production. They are cross pollinated by hand. When these flower in the field, those not true to the color class of the parents are rogued out. Some off colors are likely to be missed and we do not guarantee the color but if customer is not satisfied when they flower, the bulb may be returned and we will replace. Even tho when the color is not as expected, few customers are willing to part with the bulb. Assorted colors cost less, are equally satisfactory and equally good. Very often one gets from them pure self colors worth three times the cost.

Wholesale prices are higher. Postage, labor, taxes and all that affects sales, including this catalog and other advertising, but still we are not advancing prices of Amaryllis of equal grades. Some are even lower.

Select Strains, Assorted Colors. 2½" - 3", 90c. 3 for \$2.50. \$9.50 doz. 3" - 3¼", \$1.35. 3 for \$3.95.

Select Strains. Near White. These have much less color than White Backgrounds (which we are unable to list this year). We find about 5% are pure white. Color markings are variable but not too conspicuous. 2½", special price, \$2.35. 3 for \$6.75. Larger bulbs, about 3" diam. or over, \$3.00 ea.

Select Strains. Red; Crimson; Scarlet. Your choice of these colors. 2½"-3", \$1.00 ea. 3 for \$2.90.

Houdyshel's Hardy Hybrids. These are not hardy outdoors in the colder northern states but as far north as North Carolina, Washington, D. C., Oklahoma and even So. Kansas these have proven winter hardy if covered by 4" or 5" of soil and given a good winter mulch of straw. Possibly with a pile of brush above the straw they might be wintered in the garden farther north.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price 75c each. \$7.50 per doz. \$50.00 per 100, prepaid. Extra large bulbs, \$1.00. \$10.00 doz.

A. Johnsonii. The first Amaryllis hybrid ever produced by man, 150 years ago and now distributed thruout the world. A favorite of southern gardens. Red with white center stripe. Prices, Small, 35c and 50c. Blooming sizes, 60c and 80c ea.

Amaryllis Seed. We have less even than usual and must price accordingly, but not above their value. 25 seed for \$1.00. Order early.

Plant seed as soon as received in good sandy loam soil. Add a good portion of fine leaf mould. Seed may be just touching on edges. Cover with ½" soil. If in pots and soil is wet, cover with a pane of glass and they are likely to come up before soil becomes dry. Keep seedlings in house or greenhouse the first 2 or 3 winters so that they can grow all winter. If this is done, they usually begin to flower in 2 or 3 years. They can be transplanted at any time to give more growing space.

Plant Breeding is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Select Strains. Get several bulbs and use the pollen only from those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will usually be opened into three parts. Seed should be planted soon after ripening. Some of the seedlings of our Select Strains will be fine self colors.

Brunsvigia rosea (Sym. Amaryllis belladonna, Aitson). Familiar in Calif. and the south as Amaryllis belladonna, Naked Lady Lily, etc. It is hardy where minimum winter temperatures are about 10° above zero. It will be safe to plant it on the east coast to N. Car. and to Washington, D. C.; thruout the south where winters are mild; on the Pacific Coast to Vancouver. They do not always succeed in pots. We have had reports of good growth but no flowers in Fla., Miss. and La. Customers should always report to us the success or failure of such bulbs so that we may know where they may be grown successfully and where they may not. This So. African does well where there is no rainfall from May 1 to Aug. 1, as here or in its habitat. The flowers are an exquisite pink with a fine fragrance. Aug. and Sept. visitors to So. Calif. take back home the memory of these and want them.

Brunsvigia rosea major. Earliest to flower, late July to Sept. 15. 35c, 50c and 65c ea. Assorted sizes by express, f.o.b. \$25.00 per 100.

B. rosea minor. Smaller bulbs, plants, flowers and bloom later, thus extending season. Fine pink. Rare. 50c.

B. rosea, "Covina Hybrids," from a Covina garden. Several fine colors, assorted. L. 35c, 60c and \$1.00 ea.

B. Parkeri. This is a larger flowered and deeper rose form. A great improvement. Special price, large bulbs \$1.00 and \$1.50 ea.

B. multiflora var. Hathor. This is a pure white Belladonna Lily and is very rare and most beautiful. Everyone who loves the "Belladonna Lilies" and can grow them, should have this white one. Price reduced. \$3.50 ea. \$35.00 doz. Small bulbs \$2.00 ea.

B. rosea. Assorted varieties and sizes. Many are large blooming sizes. We have a surplus of some and will mix and send 50 for \$7.50 or 100 for \$12.50. Express, f.o.b. This is less than wholesale and is an excellent buy for florists, or to grow for church decoration.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 8" for a small plant and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open soft yellow orange fls. \$1.00, \$2.00 and \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant.

Special temporary prices. We want to move a lot out of a lath house and offer these special prices. Blooming size, \$2.50. Smaller sizes at \$1.00 and \$1.75 ea.

Daffodils belong to the Genus *Narcissus* of the Amaryllidaceae. **Trumpet Daffodils** are too well known and popular to need description. **Culture:** They are easy in most of the U. S. except parts of Fla. They do not succeed well in the tropics. They do well in a sandy loam or in heavy soil. It may be enriched by leaf mould but no manure. Slight shade seems favorable but full sun exposure is not bad. The most favorable planting depth is about 6". Oct. and Nov. are best planting months. The following are leading favorites and are priced lower than ever. All are blooming size bulbs.

King Alfred. Standard florists variety. Deep yellow with large frilled trumpet. 15c ea. \$1.25 doz.

Alasnam. A hybrid of, earlier and better than K. A. 20c ea. \$1.75 doz.

Fortune. Giant Incomparabilis, perfect form yellow petals, deeply frilled orange trumpet. Extra good grower. Rapid multiplier. Early. 25c ea. \$2.35 doz.

John Evelyn. Incomparabilis. White with bright yellow cup tinted apricot. Very large and outstanding. 25c. \$2.40 doz.

Winter Gold. The earliest, in Feb. here. An elegant golden yellow daffodil. 30c ea. Stock is small on some. May we substitute?

Collection. One of each, 5 var. \$1.00.

Polyanthus Narcissus. Assorted varieties. Flowers are in clusters and richly scented. Hardy in south only as they flower in winter. Smaller size may not flower, tho we think they may. 5c ea., 50c doz.; and 10c, \$1.00 doz.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel, with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. It is recommended that bulbs be potted in coarse, fibrous loam, with half this volume of peat. Add coarse sand to make soil drain quickly and a tablespoonful of bone meal for 5" pots. Some add powdered cow manure but we use more peat and less soil and give Spoonit for fertilizer. Drainage must be perfect as much water is needed when growing or blooming. Shaded but plenty light and a little sun helps make the flower.

Haemanthus. The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climates like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be very sandy and contain a good proportion of leaf mould or peat as they are shade plants and like mildly acid soils.

H. albiflos should be potted with half of the bulb above surface. The others covered to top of bulb. When growing, they should be kept moist, not soggy and never become dry.

Haemanthus produce red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this every few days as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans in almost pure sand and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf.

Collecting and growing Haemanthus is a most interesting, useful and even profitable hobby.

Haemanthus coccineus. The true Blood Lily, altho all Haemanthus are known as Blood Lilies. The umbel of scarlet or blood-red flowers come in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Flowering size, \$3.00. Extra large that should give many more flowers and seed, \$4.00. Order early. They are usually thru flowering, even in storage by Sept. 15.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in diam., often 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 10" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited and we list now in order that you may order early. No bulbs are reserved without prepayment. Good flowering size, \$5.00. Largest size with several offset, small bulbs attached, \$7.50. Delivery, Jan. or as soon as weather permits.

Delivery may be made safely to colder states by express much earlier.

H. multiflorus. Rather similar to Katherinae in foliage, form and flowers but flower usually much earlier. The plants are rather smaller and are more rare. You should have both. Delivery between Jan. and Mar. 15, but order in advance as stock is small. Flowering sizes, \$6.00, \$7.50 and extra large for \$10.00 ea.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved anytime, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and re-planted. All that you must do for them is keep the weeds down and water.

In Daylilies, the sepals are colored, petal-like, an essential part of the floral display.

In the following list those plants known to be evergreen here are marked E.

Hemerocallis Araby. 30". E. A lovely pastel color with the effect of bronze on gold dust. Blooms early. 75c.

H. Bijou. 24". June-July. Orange, overcast with rich fulvous red. 50c.

H. Calypso. Large, fragrant lemon yellow flowers. Open in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. 75c.

H. Chengtu. E. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July-Sept. 50c.

H. Cinnabar. E. Cinnamon sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

H. Crown Prince. E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25

H. Dauntless. E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 75c.

H. Florham. E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. Iris Perry. E. 36". July-Sept. Orange-bronze. 50c.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. Mandarin. E. 48". Lemon yellow. June-July. 50c.

H. Margaret Perry. E. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. E. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.

H. Nubiana. E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 60c.

H. Radiant. Rich orange. 42". June-July. 50c.

H. Rosita. E. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$1.00

H. Serenade. Rose-fulvous markings on apricot cream. Faintly overcast darker. 4 ft. June-July. 75c.

H. Sibyl. E. Dark purple-red petals, lighter sepals. \$1.00.

H. Soudan. Lemon yellow. Broad wavy petals and sepals. 3 ft. June-July. 50c.

H. Vesta. E. Deep orange with glistening gold sheen. 30". May-July. 50c.

H. Vulcan. E. Dark maroon-red. 30". July-Aug. 50c.

H. Wau Bun. Large apricot flowers, sprinkled fulvous red. The twisted and curved petals add to its beauty. 75c.

Collection of one each of the 26 var. (listed for \$15.60) for \$14.00, postpaid. By express, f.o.b. with larger plants, and an extra variety not listed, for \$13.00.

Assorted varieties not labelled. We have a large surplus of many. Price, by express, f.o.b. \$12.50 per 100. There will be 10 var. or more.

Leucojum aestivum. This hardy amaryllid is prized for its hardiness in cold climates, its very early flowering, often before snow is gone and its attractive umbel of small white flowers, with a green dot on petals. Plant 4" deep. Well drained soil is best. Blooming size bulbs in assorted sizes, 2 for 25c. \$1.00 doz.

Lycoris Bargain.

Lycoris, natives of Japan and China, are among our very best bulbs for the south and two at least, *L. Squamigera* and *L. Sprengeri*, are quite hardy in the north. Most other species are winter growers and that eliminates them for northern gardens. Cover the bulbs by about 4" of soil in full sun exposure. Leaf mould or peat added to soil is a help. *Lycoris* are recommended by many for pot culture. If one gives them a very cool room—not a "hot house"—they should succeed. Imitate Calif. winter climate, where temperatures in winter range from 32° to 60°. Most of them are hardy to Washington, D. C., and even in So. Kansas a few are grown in protected places. On the border line of their hardiness they could surely be grown in a cold frame, made of 12" boards, covered by glass or cloth with additional cover in severe weather. *Lycoris* are worth all the effort you give. All flower in fall before foliage appears.

We made some fortunate importations last year and again this year and are able to list new species and to lower prices. I hope all our customers will take advantage of these special prices.

Lycoris albiflora, a near white. We were formerly able to sell these for \$5.00 each, by the 100, wholesale. Prices now. \$1.60 each.

L. albiflora carnea. Tinted flesh color. \$3.00.

L. aurea. The Golden Spider Lily, Hurricane Lily. Pure golden yellow of great beauty. The tenderest variety, for the deep south or in pots. \$1.50 ea.

L. radiata. Red Spider Lily. A brilliant coral red. Hardy to S. E. Kansas. Flowering sizes 35c and 50c. \$3.00 and \$4.00 doz. Small bulbs, not flowering size, 10c ea. \$1.00 doz. \$7.50/100, postpaid or \$6.00/100, \$45.00 per 1000 by express, f.o.b.

L. sanguinea. Bright red. Petals not crisped or reflexed as in *radiata*. \$2.00

L. sprengeri. Hardy in north. We formerly listed as *L. purpurea*, an error. Remarkable color contrast of rose, purple and carmine with outer third of petals, a vivid prussian blue. Hardy in north. \$2.50.

L. squamigera. Magic Lily. *Amaryllis Halli*. Some resemblance to *Brunsvigia rosea*. (*Amaryllis Belladonna*.) Early fall flowers. Hardy in north. 90c ea.

Entire Collection of 7 species for \$11.00.

Nerine. This genus is seldom seen in America, altho it is one of the most beautiful and varied of the *Amaryllids*. They bloom in succession from Aug. 1 thru January. They are hardy only in the south where temperatures seldom go under 26°. But they are one of the finest pot bulbs. **Culture.** Pot or plant in mildly acid, sandy soil. Use peat or leaf mold. Alkaline soil is the most frequent cause of failure. Pot bulbs at once with bulb well covered and 2" to 4" deep in gardens. Full sun. When foliage yellows withhold water. They should be dry when dormant.

Nerine Bowdenii. 10 or more flowers in an umbel 9" wide on a 15" scape. One of the finest *Nerines* and very easy. 75c and \$1.25.

N. Bowdenii, var. Pink Beauty. Has larger, finer flowers and flowers much later, usually in late Dec. or early Jan. Multiplies rapidly yet we can seldom have enough stock to list. \$5.00 ea.

N. Bowdenii var. Magnifice, very fine improved *Bowdenii*, similar to *Pink Beauty* but flowers earlier. \$2.50.

N. rosea-crispa. Hybrid of *Filifolia* but larger in all parts. Can be kept evergreen or dried off. \$1.00 ea.

Assorted varieties, 3 bulbs for \$1.00

Pancratium maritimum. Because flowers resemble *Ismene* this is sometimes called Peruvian Daffodil, the common name for *Ismene*. The flowers have a daffodil-like cup, pure white and very fragrant. Evergreen foliage. 50c ea.

Sprekelia formosissima superba. Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like *Amaryllis*. 75c.

Tulbaghia violaceae. Small cousin to *Agapanthus*. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. \$2.00 per doz.

T. fragrans. This species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It has larger fragrant flowers than *violaceae*, in the same color. Evergreen. \$2.00.

The **Alliae**, or onions, are now included in the *Amaryllis* Family. The following Alliums are useful as foods as well as ornamental. Culture simple.

Allium schoenoprasum. True Chives. Small clumps, 10c, 3 for 25c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c.

Brodiaea uniflora. Lovely porcelain blue or white flowers on a low plant. Usually grown in pots in north but customer reported them hardy in Ohio. 6 bulbs in a 4" pot will go well with *Oxalis* in your kitchen window garden. Must have a cool room. 2 for 25c, straight.

BULBS AND PLANTS AS PRESENTS

Any time a present is needed, why compete with shopping crowds until you are so worn out that you cannot decide on what to get and finally make a purchase that you are very doubtful about. Selecting one present often spoils an entire afternoon. Nearly all your friends love flowers and are sure to appreciate a gift of bulbs, an *Anthurium* or an African Violet. The last named are already one of the most desired gifts and very frequently used. Just sit down in your most comfortable chair, our catalog in hand. Select the present at the price you wish to pay and mail us the order to be sent to you or direct to your friend. There is no tired, impatient salesman at hand to hasten your decision. You will enjoy it more than down-town shopping.

IRIS FAMILY — Iridaceae

The *Iris* is the type genus of this family, which includes *Iris*, *Gladiolus*, *Watsonias*, *Freésias*, *Sparaxis*, *Tritonias*, *Babianas*, etc.

Tall Bearded Iris. A garden is not complete without a good collection of Bearded *Iris*. These can be planted until late into the fall, but the earlier you plant the more flowers you will get next spring.

Our "Iris 400, Price List," lists nearly 250 of the newest and best. The culture information is valuable as it tells you how to grow them and how to get a profusion of flowers every year. In order to make this available to everyone, whether they wish to buy or merely want the culture information, we charge a dime for it. Don't ask for a free copy. This is a folded sheet, 9"x18", printed on both sides, no illustrations.

Special Offer of Bearded Iris. We have a surplus of several excellent varieties. **Lot 1** consists of *Iris* we listed in Spring 1950 catalog. (Price now 15c). They are modern *Iris* but average lower in price than those in *Iris 400* price list. If you want to make a mass planting of *Iris* and names are not so important, this is a chance to get a lot for very little. There will be 20 to 30 varieties in each 100 lot. Price \$6.50 per 100.

Lot 2 are varieties listed in "Iris 400." There will be 20 or 30 var. in each 100 lot.

Few of these are listed under 50c ea. Others may range up to \$1.00 or more. The limiting factor is that only surpluses are included. Price is not considered. Price \$10.00 per 100.

Both lots are priced by express, f.o.b. If wanted by mail send postage for 12 lbs. See Garden Supplies for method of finding cost of postage. We will fill Iris orders about once every 2 or 3 weeks to save cost of assembling them.

Dutch Iris. These are bulbous Iris. The flowers are not fragile like Bearded Iris and are therefore useful florists flowers.

Culture. Try to plant before Oct. 30, if possible, late planting will not do quite so well. The bulbs should not be out of the ground too long. Plant 1" to 3" apart and 3" or 4" deep, depending on size. Sandy soil with leaf mould is preferred. Full sun or slight shade. Hardy in milder sections of the north but a winter mulch is advised.

Assorted colors. 3 for 25c. 70c doz.

Planting Stock. Small offsets of assorted varieties. A few may flower, but all will flower second year. 40c doz.

I. reticulata. This bulbous iris is the daintiest, smallest and most fragrant of all iris. The flowers are bright violet blue and the perfume is that of violets. In pots, planted early, they bloom by Christmas. What more can one want? There is more. They are hardy. Our bulbs were grown in Mich. They are very desirable where small plants are wanted for borders, beds or rock garden. There is still more in their favor, the price. Formerly, they have sold as high as 35c ea. This year I can offer the top size for 15c ea. 2 for 25c \$1.15 doz.

Culture. They prefer a sandy soil, rich in humus. Add leaf mould or a little peat for the humus. In pots, be sure of good drainage. For Christmas bloom pot early, at least by late Oct., give them about 3 weeks in a cool room and not watered too heavily. Then bring to a warmer room with plenty light and some sun. Keep slightly moist until top growth shows then water more freely, and in winter, full sun exposure. Plant 12 in a 6" pan or pot and 6 in a 4" pot. Shift to garden in early spring.

Maricas have long been favorite house plants. They have pretty flowers on a leaf-like scape. Following the flowers, two young plants take their place and become so heavy that the scape bends over to the ground (in the garden, here) and the plants take root, a foot or more from the mother plant. Hence they are sometimes called "Walking Iris" or "Apostle Plants." They usually flower Jan. to March.

Culture: They are shade plants and require a soil of peat, sphagnum and/or leaf mould with a little sand or rich sandy loam. Keep moist and growing all year. They are hurt but not killed by 20° but thrive beside African violets and Orchids in the green house. Read about them in Mrs. Wilson's, "Enjoy Your House Plants."

Marica gracilis. Smallest variety. 5" pot. 75c.

M. northiana. A larger plant, larger, better flowers but a slow propagator. 7" pot. \$2.50.

M. hybrids, northiana x gracilis. We have raised some fine hybrids from this cross. *M. northiana*, the seed parent has large flowers but they are not profuse, nor does this species propagate rapidly. These hybrids have equally large and beautiful flowers and flower as profusely as *gracilis*, the pollen parent. They multiply even more rapidly than *gracilis*. They are truly a nice and easy house plant, both beautiful and unusual. Hardy in the deep south, above 24°. Price reduced to \$1.50 ea. Potted this fall they will flower next Jan. to Mar.

Moraea polystachia. African representative of the Irids. 2 ft. stems, covered by a multitude of flowers, mauve and violet with yellow in throat. Blooms profusely all winter in California and the deep south. Every one who sees them in our gardens wants them. They produce seed freely and self sown seed soon give you the hundreds you are sure to want. **Culture,** like Freesias. Jumbo size, 25c ea. \$2.00 doz. Blooming size 15c ea., \$1.45 doz.

How to Grow Freesias, Sparaxis, Ixias, Babiana and Tritonias. This closely related group of bulbs have similar culture requirements. All are hardy only in the south where

winter temperatures go no lower than about 26°. At about that temperature some injury results but bulbs survive. They mature if even colder. Where temperatures are colder they may be grown in cold frames, cloth houses or unheated houses.

In the north, all are fine bulbs for pots in a cool room in the house or greenhouse. As they are naturally winter growers, they must have cool conditions and they do not flower well when forced at a temperature range of much above 40° to 60°.

They should be grown in flats 4" deep or in bulb pots or pans. A friable sandy loam with much leaf mould added is the best soil. If part of the humus is from composted, well rotted manure, better flowers result. Plant 6 to 8 bulbs in a 5" to 7" pot.

In the outside garden, bulbs may be planted 2" to 3" deep and 10 to 20 to the foot, according to size. Give full sun exposure. Plant or pot early. October is the best month. Good results follow Nov. planting and Dec. planted bulbs usually flower well but stems are shorter and flowers are usually a little smaller.

Freesias are the most deliciously fragrant flowers one can grow. The fragrance is not too heavy and is not cloying in the house or outside.

We offer forcing size bulbs, $\frac{5}{8}$ " to $\frac{3}{4}$ " diam., as they give longer stems and more flowers either in pots or outside garden. The assorted varieties at one half of former price are equally good.

Tecolote hybrid Freesias, Rainbow Mixture well blended, 2 for 15c. 65c doz.

Sparaxis are closely related, more colorful, mostly red shades, not fragrant. 3 for 20c, 70c doz.

Ixias are 15" to 24" tall, have slender, wiry stems, nice for cutting. Flowers close at night and on dark days but the pink striped, long buds are even more attractive. Large forcing size, 3 for 25c, 90c doz. Med. 60c doz. Small sizes that flower well outdoors, 40c doz.

Babianas are smallest of this group. They do well in pots or outside. The curious plicate leaves and lovely flowers, mostly in shades of blue make them very desirable. Assorted, 2 for 15c. 70c doz.

GLADIOLUS

How to Grow Gladiolus. Glads planted Nov. 15 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the east) are reasonably sure to escape the attack of thrips. Our glad bulbs are especially grown for this purpose, matured early and dug in August. But if you plant recently dug bulbs you will gain nothing; they will continue their rest of three months before starting.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster can be bought from most local feed or seed stores. Probably Chlordane also. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants and other pests.

Dust Gladiolus 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

Many will prefer to spray instead of dusting. For a spray use "Thripocide" which we list under "Garden Supplies," 4 oz. for \$1.15 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good Gladiolus. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

Sizes. Size No. 1, 1½" up. No. 2, 1¼" to 1½". No. 3, 1" to 1¼". No. 4, ¾" to 1". No. 5, ½" to ¾". No. 6, all under ½". In the following list L. means large, No. 1 or 2; M. means medium, No. 3 or 4; S. or small are No. 5 or 6. Smallest sizes bloom and often bulblets. No. 2 and 3 are preferred for growing commercial cut flowers.

Prices are for one bulb. Multiply by 10 for the price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen. In the following list we have added a number of the very latest sorts that you will all want to try.

Burma. Heavily ruffled, deep rose red. L. 8c.

Capeheart. Early, salmon rose. L. 6c.

Elizabeth The Queen. Deeply ruffled, large flowers. Many consider it the most beautiful gladiolus. L. 10c.

Ethel Cave Cole. Florists favorite light pink. Large flowers, early and near perfect. L. 6c. No. 1 and Jumbos for 8c. They are a little earlier.

Evangeline. Palmer origination, (Greta Garbo x Elizabeth The Queen). Ruffled, light rose. Up to 5½ ft. tall and sometimes 12 open. One of the most beautiful varieties. All sizes sold for \$10.00 in 1948 and for \$1.00 last year. No. 3 bulbs for 45c.

Florence Nightingale. A new pure white that many think is the best of all. 30" flower head, 8 or more open, 5½ ft. tall. No. 3 bulbs, 20c.

Gold Dust. Very early, clear yellow. L. 10c.

H. B. Pitt. Very fine, large orange pink. L. 10c.

June Bells. Tall, ruffled white, early. 15c.

Los Angeles. An old timer, once the popular cut flower in this market. Useful in landscape because of profusion of flowers. I have seen as many as 100 from one bulb., due to numerous side branches. Plant 6" apart and water freely for best performance. A good winter forcer in greenhouse. L. 6c.

Margaret Beaton. Pure white with scarlet blotch. L. 6c.

Pacifica. Very early tall, large white. Fine for cutting. L. 7c.

Red Charm. The favorite florists' pure red. L. 7c.

Red Unknown. A fine early red. Name unknown. 6c.

Snow Princess. A very fine early white. L. 7c.

Spic and Span. Ruffled deep pink. Very vigorous and even bulblets give nice spikes for cutting. L. 20c.

White Gold. The largest, tallest, early creamy white. The only criticism I've heard is, "too large." It's a one spike bouquet. L. 8c. Jumbo, 12c.

Assorted. An especially good buy this fall as we are including all small lots, many high priced along with "lost labels" etc. No. 1 and Jumbo bulbs, 75c doz., L. 60c doz. Nos. 1, 2, and 3 mixed, 50c doz.

Mixed Bulblets of above, \$1.00 per pint, \$1.75 qt.

Please note. Increased cost of postage almost or even entirely takes all profit out of largest sizes of Gladiolus at our prices. On orders to go beyond 4th zone we can include larger sizes if by express, f.o.b. Most dealers do not prepay transportation. We do, with exceptions noted in catalog.

Gladiolus Nanus, Baby Glads. In the deep south these are winter or very early spring growers and flower long before the large type. The small, exquisite flowers are most desirable for bouquets or any florists' use. Altho higher in price, they multiply rapidly and one can soon have a good stock. They may also be grown from seed and may be crossed to produce new sorts. In the north they may be grown in pots in a cool room in plenty of sunlight. 18" to 30" tall. In the south they may be planted in Nov. or later. In mild sections of the north, plant in very early spring but buy your bulbs in the fall and store at 40°. They do well in pots and are easy to force. 4 or 5 can go in a 6" pot.

G. byzantinus. A species. We have been listing this as Foster's Purple because Mrs. Foster, long ago, grew it near here. It is a vivid purple and a winter grower here but best of all, it is hardy in the north and does not have to be dug in the fall. Plant these for extra early fls. 35c ea. \$3.00 per doz.

The Bride, pure white. 25c ea.

Assorted varieties. These include such named var. as Charm, The Bride, etc. 15c ea. \$1.50 doz.

Watsonias

Watsonias are close relatives of *Gladiolus* and culture is similar, except that they grow in winter and flower earlier in spring. They are hardy in the south where temperatures do not go below about 20°. Price, assorted colors, \$1.50 per doz.

Summer flowering, evergreen Watsonias. **Beatrices**, assorted in many colors. **Galpini**. Dwarf in size, with brilliant red flowers. **Tubularis Hybrids**. Shades of orange. Fine for cutting. **Tangerine**. Tangerine color selected from *Beatrices*. Price 25c ea. \$2.00 per doz.

LILY FAMILY — Liliaceae

Many call all bulbs, lilies, an error. Included in the Liliaceae are Hyacinths, Tulips, Muscari, *Ornithogalum*, *Veltheimia*, *Scillas*, etc.

Dutch Hyacinths are familiar to all gardeners. **Culture**. The best soil is very sandy. Full sun or half shade. Cover by 3" of soil above top of bulb, in the south. In the north plant a little deeper and mulch well.

Best varieties, assorted. 1¼" up, 15c. Flowering size, ¾" or over, 10c ea. Under ¾" for propagation. Sometimes a few give small fls. 5c ea., 50c doz. 100/\$3.75. These are really give-away prices.

Scillas are closely related to Hyacinths. All are hardy except *S. peruviana* and it has been grown in gardens in Brooklyn on L.I. and in the interior of N.Y., protected.

Scilla hispanica. Resemble Roman Hyacinths. Require shade. Assorted colors, 35c and 50c doz.

S. hispanica, var. **Excelsior**. Giant, dark blue, much like Roman Hyacinths. L. 10c, \$1.00 doz. M. 5c, 50c doz.

S. peruviana. An ideal bulb for pots as foliage is nice and the flower raceme is just above foliage on a short stem and wide and rounded in form. Usually blue flowers but we also have a few white. Hardy to N.C. on the east coast, and in Long Island. There was a great renewed interest in these last season. 60c and 75c ea.

Ornithogalum arabicum. A round, glossy black ovary in the center of a pure white flower makes a striking contrast at Easter time. Hardy only in south, but in the north they are easy in pots and bloom for Easter if planted early and grown in a cool room in good sun exposure. Low priced, easy to grow and desirable, early white flowers are a winning combination. L. 25c. M. 15c. One to 5" or 6" pot.

Veltheimia viridifolia. This is one of the most beautiful plants one can grow in a pot. The glossy vivid green leaves are wavy margined and form a perfect rosette much like a bird's nest fern. From the center arises a scape with tubular drooping flowers closely spaced. The color is a deep rosy or purplish pink of an ineffable tone not found in any other flower. It begins to bloom, if planted early, in So. Calif. gardens or other equally mild climates or in pots in the north by Dec. 15 and continues for nearly 3 months as larger bulbs send up 2 to several spikes. **Culture** is very easy. Use a sandy loam soil to which is added fine screened peat or leaf mould about one-fourth. Some charcoal is good. Do best in part shade. Drainage must be good as they need frequent watering when in flower,—but never soggy. Read potting directions again under "General Culture." Order before Oct. 1, if possible as after that date *Veltheimia* start to grow in storage. We can ship later but they are hard to pack after foliage starts. We have some marvelous bulbs this year from small to extra jumbo. There are only a few small, blooming size at 50c ea. Other sizes for 75c, \$1.00, \$1.50, \$2.00 and a few extremely large jumbos for \$2.50 ea. The larger sizes usually make several spikes and bloom much longer.

OXALIS FAMILY — Oxalidaceae

There are two types, the winter and the summer growing. The summer growing species are listed in our spring catalogs. The following are all winter growers. These are

brightest and most vivid of winter flowers for a sunny window or in the garden in the south. They give a profusion of bloom over several months period. A bed looks like a carpet of solid pink, rose, white, yellow, etc. The flowers are large, some over 1" diam.

Culture. Plant about 2" deep, 3" apart. Large bulbs may be farther apart and a little deeper. In pots, the smaller may go 6 in a 4" pot. Use good rich soil, altho they will grow in any soil. Give full sun exposure as they open only in full light and close at night. Order and plant early as they begin to sprout even in August. But they may be shipped even with long sprouts up to mid-October.

Oxalis Bowiei. A large plant with bright rose red flowers. 3 bulbs to a 5" pot. 5c ea. 50c doz. \$3.75 per 100. Largest size 10c each.

O. cernua. Bermuda Buttercup. Deep golden yellow flowers. Very profuse. 5c each. 50c doz. \$3.50 per 100. Extra large jumbo bulbs 10c. 3 for 25c. 85c doz.

O. Grand Duchess. Low growing plants, but give a profusion of very large flowers in three colors. The **Pink, Lavender and White**, 5c ea., 50c doz., \$3.50 per 100. Largest size 10c each.

O. crassipes. Flowers bright rose. Evergreen and everblooming. Increases by tubers and can be moved at any time. Plant at once. Large tubers 25c each. 6 for \$1.00.

O. crassipes alba. A pure white form. Very pretty and always in bloom. 35c. 3 for \$1.00.

O. Regnalli. Large, truncate leaves, reddish on under side. Trifoliate. Evergreen and everblooming. Large white fls. Tuberous rooted. 35c ea. 3 for \$1.00.

Oxalis Special. The bulbs offered in this lot are assorted in size and color. They will all flower well. Some are accidentally mixed, others are surplus. Price, 30 for \$1.00.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or Zantedeschia, Black Callas and other Aroids.

Culture. All Zantedeschias, Arum palaestinum and other aroids listed here are desirable for pot culture. A. palaestinum will start about Sept. or later. Do not put this bulb into moist soil before that or it will rot. Zantedeschias—pink, and yellow—may be potted by about Dec. 15. Don't rush them, as too much water before they start to grow may rot them. They may be held back and started in early spring, here in late February. All do well in the garden in a moist semi-shaded cool place. They are not hardy in cold climates; dig in fall. The White Calla usually blooms in California in the garden in late winter. They may be planted in early fall in pots or garden. All do best in mildly acid soils, on sandy side. For acidity add peat. Most Aroids are shade plants.

It is an error to keep large White Callas growing continuously. If rested thru summer you will be rewarded with flowers. Callas as pot plants need some sun, enough to prevent spindly growth, plenty of light and like all plants, good ventilation. They need abundant water but good drainage.

Zantedeschia aethiopica. Well known **White Calla**. They can be potted anytime between Sept. 1 and Jan. 1. Even later if available. Water once when potted to settle soil. Then keep soil barely moist until growth is well started. When growing well they need plenty of water and perfect drainage, give about half shade. They are hardy outdoors down to 15° but tops may be cut down by frost at about 20°. Blooming size, 25c. Large, 50c, 75c and \$1.00.

Z. rehmanni elegans. Light pink Calla. Easier to grow and flower than the dark pink. A few are very light, almost white when forced but darker in the garden, and always beautiful. Large bulbs, 40c. 3 for \$1.15.

Z. elliotiana. Deep Golden Yellow Calla. Like all the callas, they need some sun. If they do not have it they grow too tall and weak and may fail to flower. Half sun is usually right. 30c ea. 3 for 85c.

Arum palaestinum. Black Calla. Solomon's Lily. Foliage and flowers are shaped like

callas but flowers are black. Plant 4" deep in garden, not so deep in a pot. Begin to water about Sept. 1. Flowers in Feb. Large for 75c and \$1.00 ea. Small, for a start, 35c.

Anthurium. Until very recently these have been high in price. We have had constant inquiries for them and now that prices are really reasonable we are pleased to list them. The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like in red, pink and sometimes white. They are much used as Florists flowers. Flowers last six weeks on a plant.

Anthurium andraeanum. Shaffer Hybrids. These are considered to be the best Anthuriums. Fls. up to 6" long, orange-red, varying to rose or white. 6" to 8" plants that should begin to flower at 10" to 12". Sometimes they flower even at 8". Assorted colors, \$3.75. Blooming size, about 12", assorted colors, \$6.00. Large plants in bloom, \$7.50

A. crystallinum. A beautiful foliage plant that does not need flowers, tho it has green fls. Leaves are cordate-ovate to 10" wide and 14" long, deep velvety green, prominently veined white. Pale rose on underside. \$3.75. Blooming size, \$5.00.

Spathiphyllum clevelandi. Close relative of Anthurium and formerly so classified. Fls. are white and freely produced. Very easy to grow. Blooming size, \$3.75. Small, \$2.50.

Culture of Anthuriums and Spathiphyllums. These are tender tropical plants, suitable only for pot culture. Soil formula: We prefer to use about $\frac{1}{4}$ old osmundine; $\frac{3}{4}$ peat. Add enough sponge rock or coarse sand to hasten rapid drainage and aerate the compost. One can also add a little oak leaf mould. They will grow in any compost with sand. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot, or build up with sphagnum.

Use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 45° does little harm other than to stop growth and flowering. 80° or over is a good daytime temp. Air should be very humid. Spraying foliage daily increases air humidity. They should never become completely dry. Water about every two days.

Shipping. These plants are set back seriously when shipped loose roots. We will ship in only one way—in clay pots, by express, f.o.b.

See our Spring catalog for other aroids.

For local customers who call, we can at present supply potted Fancy Leaf Caladiums for 75c and \$1.00.

Fancy Leaf Geraniums, Geraniaceae

Fancy Leaf Geraniums, Scented Leaf and new Zonals are such desirable pot plants we have decided to list them.

Culture. The small plants when received may be planted in a 3" pot. They should never be overpotted. Later shift to a 4" pot. This is about the right size to maintain a Geranium for house culture. They flower well if root bound but in a large pot they make rapid growth, become too large and do not flower. The soil should be good garden loam with coarse sand and peat or leaf mould in sufficient amount to aerate the soil and improve drainage. Do not use manure or fertilizer in soil. Later when growing, one can use Spoonit if leaves become pale. Soil should be about pH 5.0 to 6.5, slightly acid.

Temperature should never be under 26°. Below that the plants will be badly injured or killed. The ideal temperature for growth and flowers is 40° at night and 60° to 80° in day time. **Sun exposure.** Give full sun, in a south window in winter but slight shade is better in summer. **Watering.** Do not keep them wet or soggy, nor dry very long. Let soil become on dry side then give a good watering. Empty saucer under pot when thru draining.

When the small plants are potted one can leave a little of the moist sphagnum around roots. You should not expect flowers for about 10 or 12 weeks. By that time the foliage types should begin to reward you also. Reactions are variable. Order as early as possible and in time for us to deliver before very cold weather prevents shipping.

Botanically, the species *Geranium* is a wild flower in the U.S. and other parts of the world. The cultivated "Geraniums" are mostly the species, *Pelargonium* of which our Lady Washingtons are but one group.

Fancy Leaf Geraniums are a group of Zonal Geraniums having more vivid, more attractive or a greater contrast of colors in their foliage than the standard varieties.

Distinction. Small, round leaf with toothed and crinkled edge. Dark zone near outer edge. Small red fls. Good compact pot plant. 75c.

Happy Thought. Bright green leaves with large light yellow center with splashes of brown and orange. Faintly zoned. Vermilion fls. Healthy compact pot plant. 75c.

Marechal MacMahon. Golden yellow-green leaves with red-brown zone toward center. Small scarlet fls. A colorful plant. 90c.

Mrs. Wm. Languth. Silvery green leaves, bordered white. Cherry-red large fls. Best white leaved pot plant. 75c.

Skies of Italy. Very fancy tri-color leaves, deeply notched. Dark zone with crimson and orange. The green background has a yellow edge. A strong grower. Keep it pot bound and cut back strong shoots to encourage short side growths. Light feedings of Spoonit intensify color. Vermilion fls. \$1.10.

Standard Zonal Geraniums. These have less fancy foliage but larger and nicer flowers than the Fancy Leaf Zonals.

Better Times. Large round flowers, carmine and red in large clusters. The best seller in 1951. 75c.

Kovalevski. A red that may possibly be described as pimento-red. Large round flowers in large clusters that are unusually attractive. Rare. 90c.

Scented Leaf Geraniums are liked by many as pot plants or garden plants.

***Pelargonium crispum*, Prince Rupert.** Stiff, much crinkled, small leaves densely placed on an upright stem. Lemon scented. Very fine for pots or garden. 75c.

***P. denticulatum tomentosum*.** Denticulate leaves on an upright stem, scented peppermint. A pretty plant for pot or garden. 75c.

***P. fragrans*.** Small round grey leaves strongly scented nutmeg. Small white fls. 75c.

***P. tomentosum*.** Gray green, prostrate plant with large velvety leaves shaped like grape leaves, scented peppermint. For outdoors in south or a hanging basket. 75c.

Delivery is not made in very hot weather. When cool fall weather arrives, about Oct., we begin shipping. This way your plants will arrive in better condition.

THE GESNERIA FAMILY — Gesneriaceae

This family includes the following genera: *Gloxinia*, *Saintpaulia*, *Episcia*, *Achimenes*, *Smithiantha*, *Corytholoma*, *Isoloma*, *Streptocarpus*, *Trichosporum*, etc. Some of these are listed in our spring catalog.

Gloxinias. We can usually offer a few that will be dormant and ready to ship by Oct. to Dec. Thus one can gain as much as two months time for early planting as cold weather usually interferes with shipping after Jan. 1. We can offer probably all the following var. for earlier shipment: **Blanche de Meru**, **Emp. William**, **Emp. Frederick**, **Etoile de Feu**, **Mont Blanc**, **Prince Albert**, **Princess Elizabeth**, **Roi des Rouges**, **Tigrina**, **Violacea**, **Queen Wilhelmina**. These were 35c var. in Spring catalog, but now are larger and you have the advantage of early delivery. Price now 50c ea. We also have the following in very recent new sorts: **Frederick Benary** (we find a few very fine deep violet colors in these besides the scarlet with white throat), **Beacon**, **Crimson Glow**, **Swiss Emblem**, **Pointelle**, and **Rose Sensation**. Price of these, \$1.00. For culture directions and descriptions send 10c for Spring, 1951, cat., none for free. These are all straight prices, no dozen rates. Order early as we have few. If we are out of variety ordered we will send a substitute as near like it as we have. It is best if you name second choices.

Local Customers in Los Angeles area. If you call we can sell you the potted plants now. These are in right soil and can be left in the same pot for next year. Some of our

plants are a little leggy due to crowding or too much shade. Prices of potted plants 75c to \$1.25.

Gloxinia Seed. We saved seed from several varieties including some of the newest. This is mixed seed and you should get a variety of colors. The seedlings flower the first year. Small packet for 50c. **Culture:** We prefer to plant in almost pure, well broken up peat, in a large clay pan. Some sand may be added but no soil. Be sure peat is completely wet, thruout. Level the surface and sow the seed, thinly, as nearly all grow. Cover pot with pane of glass and no watering is likely to be needed until they are all up. Keep warm, 60° to 80°, and in full shade. You will need to transplant when they begin to crowd, into 3" pots or smaller.

Streptocarpus are very close relatives of Gloxinias but are fibrous rooted and can only be moved as growing plants. The culture is much the same except as to temperature. They thrive in a cool house and are easily grown in a lath house in summer. The color range is similar. The flowers are smaller and freely produced. They are followed by long twisted seed pods, hence their name. They are easily grown from seed, which save, as we have no seed for sale. We pack plants in their own soil and ship carefully, which adds to the cost. Order early. They cannot be moved in winter. "**Assorted hybrids,**" \$1.00 ea.

Episcias can be grown in pots but after the plants become large it is best to hang with our pot hangers. We prefer baskets of pure sphagnum, well compressed. They need to be kept moist and shaded. They are handsome foliage plants with attractive flowers. They are very tropical, can only be shipped in warm weather, probably to Oct. 15 to most states, and should be grown in a warm room, 70° or 80° in day time and not below 60° or 65° at night. They die at 55°. We can now supply promptly, **Episcia chontalensis**, **E. coccinea**, **E. cupreata**, **E. splendens** and **E. sport.** at \$1.25 ea. or the 5 var. for \$5.50.

Aeschynanthes pulchra is now the valid name for the Gesneriad formerly called *Trichospornum pulchrum*. The authority is *Gentes Herbarum*, Cornell University publication. Fortunately, amid the vicissitudes of nomenclature changes, the plants remain unhurt and unchanged. This one is a nice trailing, almost woody vine. In nature, they are said to be epiphytal and to climb trees. If they do, I envy the monkeys in those trees as the plants are attractive and the freely produced flowers are tubular, vividly colored, freely produced.

Culture. Advised soil is mixture of sphagnum and osmundine with small granules of charcoal. However, we add some sand when potted and pure sphagnum in baskets, omitting osmundine in both cases. Soil or plain dirt is not good for many Gesneriads. Temperatures should not be under 60° at night. They require frequent watering, humid air and shade. We ship only in warm weather. Price, out of pot, approximately blooming size, \$2.75 postpaid. In clay pot, by express, f.o.b., \$3.00. In nice wire basket, express, f.o.b., \$3.75.

Achimenes. We shall probably have a few ready in late Dec. or early Jan. **Special.** 10 assorted tubers, \$1.00. Pot at once in coarse leaf mould or peat, cover ½" to 1" and keep moist and warm. See spring catalog for full culture and listing of 50 varieties.

AFRICAN VIOLETS — Saintpaulias

The latter is the correct botanical name. They are the most popular of all house plants at the present time and they are likely to retain this eminent position in popular favor indefinitely, as they deserve it.

Saintpaulias were discovered by Baron von Saint Paul, who sent seed to Europe where they first flowered in 1893. They are natives of the Usambara district of Tanganyika, equatorial east Africa. Tanganyika includes Lake Victoria, source of the Nile, on the north and extends 12° south. It is entirely in the tropical zone. It is always summer, with almost no variation or seasonal changes in the climate. Due to the hot Indian Ocean on the east, the humidity is high.

They were discovered by the Baron in two places, both in tree covered areas. In

one at an elevation under 150 ft., they were found both in rich soil full of humus and in the fissures of limestone rocks. In the second place, they were growing on granite rock at an elevation of 2,500 feet.

The mean average temperature at lower elevations is 80° with little variation on either side. It is a "mean" temperature for the white races and few live there. At higher elevations the mean average is about 70° , which is not uncomfortable, but monotonous.

The Saintpaulias soon spread from Europe to most countries where house plants are grown. Their popularity was instant and always growing in intensity. Mrs. Wilson, in her book, records the first real test of their popularity. In the fall of 1946, an Atlanta, Ga., nursery sponsored the first African Violet Show. The thousands who attended from everywhere created a traffic problem which extra police could scarcely handle. Later, someone in Manheim, Pa., grew a plant with an off-white flower. It was advertised as a yellow, and created a furor. Collectors from many states visited Manheim to see it, to buy plants or leaves. Local citizens were besieged by questions to the point of much discomfort. The myth of a yellow Saintpaulia still lives and we get inquiries for them nearly every day. We would like to answer this question once for all. But it will not be for always. It will crop up for many years.

There is, there never has been and there probably never will be a yellow Saintpaulia.

Culture of Saintpaulias. Climate and soil conditions in the habitat of a plant supply a good starting point for the discovery of their proper cultivation. Plants possess a variable degree of tolerance and adaptability. Often a plant or an animal, transplanted to new conditions, do better in the wild or under culture in the new situation. For example, rabbits in Australia, the English Sparrow in America and Cactus in Africa appear to have gained by transplantation.

African Violets under the hand of man have been vastly improved and many new colors and forms have been produced. Grotei, the climbing African violet, and other new species have been discovered. They have also adapted themselves to somewhat different conditions. They are strictly house plants only.

The advised **range of temperatures** for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15° , they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40° . It may be that if kept at 50° for some time they might then survive a lower temperature. But they neither grow nor flower at 50° . Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Express is safer. Nor do we ship on very hot days in summer. We plan to ship so that they do not arrive to you on a week end and thus remain in a carton a day or two longer.

As growers seeking to sell plants to amateurs, we are interested in your success and for that reason we plan our shipping dates as explained and tell you how to grow them when you receive them. It is not enough that you receive nice plants in bud or bloom. They must continue to grow and bloom for you. Some growers overlook one factor. Mrs. Rector in her fine book on African Violets relates the practice of one grower who keeps his greenhouses heated to 80° . The plants grow more rapidly and flower much younger at this temperature but when transferred to living rooms, most of the old top dies off and the plants do not flower again for from 6 mo. to one year. Our Saintpaulia Greenhouse is heated and air conditioned. The thermostats are set to regulate the temperature range to that which is usually found in living rooms. Thus there is no great shock to set

the plants back when moved. Many of our customers report first that plants are received in excellent to perfect condition and later that they are still flowering.

Watering. Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. If late in morning, cover plants with newspapers after watering, until dry. The interval between waterings should be long enough to permit the top soil to become slightly dry.

Very many advise to set the pots in a pan of tepid water, and to remove when the surface becomes moist. This is an allowable practice but it requires supplementary procedures. One must sometimes spray the foliage and also water from the top of pot part of the time. Culture advice for any house plant usually says, "Be sure the drainage is perfect." But sub-irrigation does not result in perfect drainage. Not enough water is likely to drain away when removed from a pan of water. Most of us must use hard water containing soluble alkaline or other salts. When subirrigated these salts remain in the soil and are added to by each irrigation. Nearly all cultivated plants, particularly shade loving plants, require some leaching of the soil to remove excess soluble salts. Continued too long, subirrigation may raise the soil pH sufficiently to stop flowering.

Good **ventilation** is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Some growers sell prepared soils. Probably they are nearly all good. But the plants have a considerable tolerance and do well in a wide variety of soils. They should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good.

We use about one half oak or redwood leaf mould and one half sandy loam or good loose garden loam. To this is added enough sponge rock or coarse sand to make the soil gritty and aid drainage. Fine screened peat is as good or better than leaf mould. It is not at all necessary to buy prepared soils.

Fertilizers. We use only Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

Sun exposure. Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity seems to us to be one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely, plants in a south window, anywhere in the north temperate zone, in winters, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The plants need much light. The color of the foliage will tell you what they can endure. When healthy plants have light, yellowish foliage they probably receive too much sun. Medium green is about right. Very dark green foliage indicates insufficient light and lack of flowers corroborates it.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in *How To Grow African Violets* (which you should have,—see our book list), says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Greenhouse growers who force lilies for Easter are able to advance the blooming date by the use of electric light. Any kind of light will do provided the plants receive 15 to

30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the northern states where winter days are short and dull.

Humidity. Saintpaulias bloom better in a relative humidity of 60% to 70% altho they live and appear healthy at a much lower degree. At this moment the humidity of our violet house is 62%. In our kitchen, it is 28% at 80° temperature. In other rooms it would be lower. Heated rooms are likely to be 25% relative humidity or less, at times. It would be uncomfortable for us to live in a room sufficiently humid for violets. One can localize a higher humidity around the plants by setting the pots over a saucer containing gravel and sand and filled with water which does not quite touch the pots. Mrs. Rector's book, "How To Grow African Violets" (see Garden Reference Books), suggests a tray made from a chick feeder, with wire guards removed. Many sizes are available at feed stores. In the bottom place sand, gravel or coke with water. Plants set in these trays will have a sufficiently humid atmosphere. Most of our houses would be more comfortable for us if the humidity were higher in winter.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. One way to remove and kill them is to use a bit of cotton on the end of a toothpick. Dip the cotton in alcohol and pick off the bugs. Do not touch foliage with the alcohol. Hexotine, used as a spray or dip is effective. A badly infested plant should be discarded or at least removed from vicinity of all other house plants. Hexotine and all effective insecticides are very poisonous. You must not breathe the fumes. You must avoid skin contact.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mite spreads to all the plants and effective measures must be at once applied. An effective measure is to immerse entire plant and pot in water at 110° for 15 min. Keep water at this temp., adding more hot water. Wash shelves and pot saucers with ammonia solution. Repeat the treatment one month and again two months later.

We offer **Hexotine** under Garden Supplies. Used according to directions, this spray is an effective control of mite. Several sprayings at 7 to 10 day intervals will be needed. It may cause temporary loss of flowers. The spray must be used at once when mixed. Prepare only enough for 15 minutes use. Plants may be dipped in solution of 2 teaspoonfuls to one gallon of water. It cannot be mailed. It must go by Express, f.o.b., which more than doubles its cost.

Sodium selenate will keep plants free of all insects. It is a dangerous poison. Discarded soil must not be placed in a vegetable garden or under a fruit tree as it may thus poison those who eat the fruits or vegetables. The method of use is described in the African Violet books which we list. Read them both on this topic. Space does not permit a full discussion here for this or some of the less destructive pests and diseases.

In the following list you will find most of the latest and best. If one that you want is not listed we may have it in too small a quantity to list. Please inquire. Names in parentheses are synonyms of the listed name or the name of originator. When you order we advise that you name a few substitutes. Our stock is small on a few varieties, especially the newest ones which are often hard to get promptly.

Important. Don't forget to include sales tax on Calif. orders. Some Calif. orders omit it on A. Violets and we must write for it before shipping.

Special Handling or better still, **Special Delivery** fee should be sent as these plants need this service.

Distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in almost perfect condition. They did not quit blooming.

Azure Beauty. Beautiful double. Fls. white with lav. or blue markings. \$2.00

Blue Delight. Two-tone like Blue Eyed Beauty but more pronounced darker blue eye. \$1.50. Sm. \$1.00

Blue Heiress. Dupont seedling. Brilliant blue fls. with girl-type foliage. Makes a lovely plant. \$2.00. Small plants \$1.00

Blue Lady. (Hendrix) Very light blue flowers in abundance. New. \$1.50

Blue Lady Girl. (Hendrix) Light blue flowers, girl foliage. Sm. \$1.50

Blue Warrior. Bright blue fls. Beautiful plant. Leaves red underneath. \$1.25

Bugle Girl. (Hendrix) Beautiful scalloped foliage. Orchid fls. \$1.50

Carmen. New. A very good red. \$2.00

Dark Beauty. Double. Variegated dark blue and white. Ruffle edged fls. \$2.50

Delight. Double. Powder blue fls. Dark smooth leaves. \$2.50

Dorlene. (Marsh) Tri-colored flowers, dark blue. Light green lg. leaves. \$2.00

Double Fringed White. 1952. \$2.50

Double Neptune. (Queen Neptune) Lg., fully double dark purple fls. \$1.25

Evening Sunset. (New 1952) A light blue with an overcast of pink that predominates in the upper two petals, like sunset and blue sky. Very outstanding. \$2.50

Fantasy. Lavender, variegated and splotted flowers. \$1.75. Sm. \$1.00

Frilled Blue Delight. (New 1952) The petals are frilled. \$2.50

Geneva's Daughter. (New 1952) Light blue, white edge, with girl foliage. \$2.50

Geneva Pink. (1952) Large flowers of a good pink shade. \$2.50

Geneva Rainbow. Burgundy with white border. Fades to lavender. \$1.50

Geneva Star. White with blue border. Very striking. \$1.75

Gorgeous Bicolor. Beautiful large lavender flowers. A favorite. \$1.75. Sm. \$1.00

Gorgeous Blue Wonder. White background shaded with a blue overlay. \$2.00. Sm. \$1.00

Grotei. Climbing Saintpaulia species. \$1.75

Grotei x Pink Girl Hybrid. Cross of Grotei and Pink Girl. \$2.50

Helen Wilson Bouquet. Double. Wine red flowers. Girl foliage. \$1.50

Innocence. New pure white. Foliage red underneath. \$2.00

Lady Geneva. Pat. Blue with white border. \$1.00

Lavender Beauty. Lovely silvery mauve flowers. Very large. \$1.50

Navy Bouquet. Very dark navy blue, double fls. Profuse bloomer. Crinkled lvs. \$1.75

Orchid Girl. Double. Excellent, large orchid flowers. \$1.50

Orchid Neptune. Double. Orchid sport of double Neptune. \$2.00

Orchid Sunset. Double. One of the Rainbow series. Clear orchid \$2.00

Orchid Velvet. Very large flowers and foliage. \$2.00

Painted Girl. Snowy white, glistening as if covered by diamond dust, bordered by orchid. The flower is a perfect gem. \$2.50

Perfection. (Hendrix) New. Compact girl foliage. Orchid fls. well above leaves. \$2.00

Pink Delight. New. Light, clear pink flowers in abundance. Lovely dark bronzy foliage. \$2.50

Portland Rose. New. A vivid shade of rose with darker eye, glistens as if touched with dew. A new color in African Violets. \$2.50

Plum Glory. Westcoast red. Plum red flowers in abundance. \$1.50

Purple Knight. Excellent large, free flowering variety. Bluish purple. \$1.75

Purity. Double white. \$1.50

Red King. A rich burgundy red against velvety foliage. Does not fade. \$1.50

Red Lady. 1952. Exceptionally clear color which does not fade. Girl foliage. \$2.50

Red Princess. 1952. An outstanding red, crimson-wine red. \$2.50

Rose Rainbow Double. Rose and white variegated. Very desirable. \$2.50

Ruby Bouquet. This is of very vivid ruby wine color, glossy dark green leaf. \$1.75

Ruffled Beauty. 1952. Ruffled girl foliage with highly serrated edge. \$2.00

Ruffled Queen. 1952. Color blue burgundy, with ruffled, frilled petals. \$2.50

Trumpet Girl. (Hendrix) New. Beautiful foliage with lavender fls. \$2.00

Sea Girl. Double. Medium blue, excellent. \$2.00

Sherry Girl. Dark green girl foliage. Blue flowers held well above foliage. \$1.50

Snow Girl. Pure white with lovely girl foliage. \$1.50. Sm. \$1.00

Snow Prince. Beautiful velvety foliage with lg. white fls. in abundance. \$2.00

Taffeta. 1952. Named because of glossy foliage when mature. \$2.50

Star Sapphire. Unique star shaped deep blue flowers. \$1.50

Western Girl. (Rector) Fls. Dauphin's Violet. Lovely foliage. Good bloomer. \$2.00

African Violet Leaves. No leaves sold except those listed below.

Price. 50c ea. 12 for \$5.00. 50c extra for orders under \$3.00.

Apollo, Dbl. lt. blue	Dark Blue Fringette	Morning Glory (Hendrix)
Black Beauty	Mauve Fringette	Maro (Hendrix)
Beauty Girl	White Fringette	Oak Leaf Girl (Hendrix)
Blue Jewel	Gypsy Apple Blossom	Opal Girl
Bronze Queen	Gypsy Blue Bl	Oriental Girl
Brussels Sprout	Gypsy King	Petite Double
Crazy Quilt	Gypsy Lace	Queen Betty
Cristina	Gypsy Ice Girl	Rosetta Red
Charro (Hendrix)	Gypsy Pink	Red Dupont
Diplotricha Amazon	Gauche (Hendrix)	Rose Marie
Dbl. Blue Warrior	Helen Wilson Bouquet, Dbl.	Velvet Glow
Blue Lav. Fringette	Lady Loretta	Yellow Brown Girl
Red Lav. Fringette	Lady Grace	

Price. Leaves 35c ea. 3 for \$1.00. 12 for \$3.00.

Amethyst	Edena Bi-color	Royal Girl
Azure Glory	Edena Lily	Red Moire
Blue Boy	Evelyn Banks (Pink)	Red Chief
Blue Boy Supreme	Geneva Star	Red Queen
Blue Butterfly	Frieda	Rosanna Charm
Blue Chard	Gypsy Ann	Rosebud Dbl.
Blue Girl Compacta	Gypsy Prince	Sapphire
Blue Eyed Sue	Gypsy Princess	Saffron Red Boy
Blue Moire	Gypsy Queen	Sailor Boy
Blue Girl Supreme	Lav. Pink Princess	Sailor Girl
Blue Eyes	Marine	Sky Blue
Blushing Maiden Supreme	Maroon	Sea Foam
Commodore	Norsman	Tu Tone Dbl.
Diana	Orchid Girl	Violette Bronze Baby
Diplotricha, Species	Orchid Wonder	Violette Pink
Dahlia	Orchid Beauty	Violet Beauty
Dimples	Pink Queen	White King
Dbl. Mentor Boy	Pink Supreme	White Supreme
Dbl. Orchid	Purple Prince	White Butterfly
Dupont Lavender Pink	Purple Dawn	Wine Velvet
Dupont 1-2-4-5	Red Edged White Boy	Wonder Star
Edena Princess	Ruffles	

Please name a few substitutes as some we have only in small quantities.

THE ORCHID FAMILY — Orchidaceae

Cymbidiums and Cyripediums are easily grown in living rooms if humidity is increased by a method as we have advised for African Violets.

Cymbidiums are very useful for corsage flowers. We can supply the following, **Butterfly**, cream to tan: **Doreen**, greenish bronze; **Giganteum**, red-brown; **Moir**, greenish bronze, barred rose; **Winter Cheer**, bronze and deep rose; **Zebra**, lavender pink. Price \$2.50 per front bulb with foliage. **Madeline**, deep pink, \$5.00 per bulb with foliage, **Hookerianum**, Olive green, \$7.50 per bulb with foliage. **Assorted varieties**, unlabelled, \$2.00. Clump of three \$5.00.

We ship Cymbidiums, loose roots, by express, f.o.b. We do not ship them in pots. It is expensive and unnecessary. These one-bulb plants should flower in 2 or 3 years, in pots with correct culture. Only a very few flower the first year and not many the second. Clumps of three bulbs have a correspondingly better chance to flower early. A clump of 3 cost $2\frac{1}{2}$ times the price of one bulb.

Culture. They may be grown in pots or in the ground under trees or lath house where winter temperatures never go below 24° . Establish a bulb in a 5" to 7" pot in a compost of leaf mould and/or peat. To this add about 25% sand or rich sandy soil. Water to settle soil. Then spray foliage daily for a couple of weeks but water only a little. After that gradually increase watering. For more complete culture instructions, send 25c for our 10-page booklet, "How To Grow Orchids."

Cypripedium insigne. Usually the upper sepal is green with brown-purple spots. Petals, yellowish green. There are many variations from this. Florists use them in corsages. Fls. about mid-winter. **Prices**, \$3.50, \$5.00 and \$7.50. The \$5.00 size should flower this winter. We ship Cyps. in clay pots, via express, f.o.b. only.

Culture. Insigne is hardy down to 28° , most commercial growers establish Cypripediums in osmundine. We prefer to grow in peat and sphagnum as they are much easier to establish and they do well. Do not keep plants in a soggy condition which causes rotting of roots. Nor should they ever become entirely dry. "Moist" is the correct condition. For more information about culture send 25c for 10-page pamphlet, "How To Grow Orchids."

Cattleyas. The conditions necessary for growing Cattleyas successfully are seldom met in a home. It can be done but we do not want to advise a plan that may fail. We have two booklets giving culture directions for orchids. "How To Grow Orchids," price 25c. Many orchids are discussed. It is especially advised for Cymbidium culture. Cattleya culture is more completely explained in our 1949 Orchid Price List, a small folder. Price 15c. All listings in this folder are cancelled. There are many good hints for potting and growing orchids in Chabot's Greenhouse Gardening For Everyone, listed under Books in this catalog. The best of all references on Orchids as well as all other plants is Bailey's Cyclopedia of Horticulture. (See Books.)

Special Offer. We have about 25 Cattleya hybrids that were repotted in Dec. 1950. They will not need to be potted again for about two years. These are all choice hybrids and our former list price of \$7.50 ea. is a bargain price but we will now offer our selection for \$5.00 ea., shipped in clay pots, mostly 6" pans, by express, f.o.b.

We have about 500 that need repotting. These are not offered for sale at present. As soon as possible we shall divide and repot all. 1000 or more, freshly repotted plants will be offered in our next Jan. catalog. Many growers do not tell you when a Cattleya was repotted or that plants need this but our labels show when the plant was last given fresh osmundine.

Osmundine \$1.35 per lb., postpaid.

Bletilla hyacintha are lovely terrestrial orchids and are said to be hardy in milder sections of the north. Flowers are typical orchids in form and color and about $1\frac{1}{2}$ " wide. Price 60c and 75c ea. Delivery Nov. 15 and later. **Culture:** Plant in 75% sun exposure. Soil should be at least half peat or leaf mould around the plant. Cover about 4". Mulch well until spring in colder states.

RANUNCULUS AND ANEMONES — Ranunculaceae

Ranunculus range in color from red, pink, yellow to white. This strain if well grown produces giant double flowers on tall stems.

Anemones are red, pink, white and blue but blue predominate. The flowers of this strain are mostly single which we prefer in Anemones.

Culture. They are hardy only in the deep south. The best planting time is Sept.-Oct., in So. Calif. Bulbs start better in a medium temperature. In hot weather, start them in

a flat in the cool shade of a tree. In cold weather start them in a moderately warm room. When not over 1" high transfer to garden. For pots, place pots when starting the bulbs as directed for the flats. The best soil is rich sandy loam. To heavier soils add much leaf mould. Do not water much when sprouting as the best bulbs will rot if too wet.

We offer only the large size. They cost much more per bulb but each bulb gives so many flowers that your flowers cost no more and are earlier; larger, better and more sure.

Tecolote Giant Double Ranunculus. 2 for 15c. 50c per doz.

Anemones, large size bulbs, same price as Ranunculus.

Maranta Kerchoveana. Rabbit Tracks. Nice, easy-to-grow shade plant, for pots. Acid soil. 75c.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Aregelia, Aechmea and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture** of Aechmea and Aregelia is the same.

Aechmea calyculata. Bright green leaves, yellow fls. \$2.00.

Aregelia spectabilis. Bronze foliage, barred grey green on back. \$3.00.

Billbergia Burkholtzi. Tall, slender, erect green leaves. Rose bracts, lavender fls. \$2.00.

B. distachia. Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 50c.

B. nutans. Mid-winter, beautiful inflorescence on small plants. Fine pot plant. 50c

B. nutans x Cryptanthus acaulis. Highly colored, bronze and green leaves. Compact plant. \$1.50.

B. pyramidalis. Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

B. rubro-cyanea. Most colorful foliage, red and green spotted cream. Green fls., edged blue. Crimson bracts, \$1.00.

B. speciosa. Green lvs., striped on back. Green fls., tipped blue, Rose bracts. \$2.00

B. Theodore L. Meade. Green lvs. and large, beautiful inflorescence, continuous all year on new growths. \$1.50.

B. thrysiflora, (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

B. Zebrina. Lvs., banded white on back. Salmon bracts, green fls. \$1.50.

Collection all 12 varieties, value \$19.00. Express, f.o.b., \$16.50. By this method we can send larger plants. By mail, postpaid \$17.50.

Big 4 Collection. Nutans, Distachia, Rubro-cyanea and Zebrina. Value \$3.50. Price \$2.75. Include Special Handling for these plants by mail.